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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,746	06/30/2003	Larry Ervin Rising		1349
7590	03/21/2005		EXAMINER	
LARRY E. RISING 3820 FIRESTONE RD KERNERSVILLE, NC 27284			HU, HENRY S	
		ART UNIT	PAPER NUMBER	
		1713		

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

LD

Office Action Summary	Application No.	Applicant(s)	
	10/611,746	RISING, LARRY ERVIN	
	Examiner	Art Unit	
	Henry S. Hu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on Pre-Amendment of 1-21-2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 3-15 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1 and 2 is/are rejected.
- 7) Claim(s) 1 and 2 is/are objected to.
- 8) Claim(s) 1-15 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date: _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____	6) <input type="checkbox"/> Other: _____

1. It is noted that **pre-amendment** on Claim 1 filed on December 17, 2004 was received. The amended **Claim 1** relates to a chemical formulation after removing the word of “method” at line 1. **Claims 1-15 are now pending.** An action follows.

DETAILED ACTION

Specification

2. The disclosure is objected to because of the following informalities:
In **page 1** at line 1 of the Title, the recitation of “NPB(n-propyl bromide)” should be changed to “**NPB (n-propyl bromide)**” according to the traditional wording used in the art. A space is needed in between NPB and (n-propyl bromide). Please refer to page 2 at line 2. Appropriate correction is required.

Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. **Claims 1-11**, drawn to a composition, classified in class 526, subclass various.
 - II. **Claims 12-15**, drawn to a method of coating a composition, classified in class 427, subclass 385.5.

The inventions are distinct, each from the other because of the following reasons:

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Inventions of Group I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product or composition as claimed can be used in a materially different process, such as being applied by vapor deposition.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. This application contains claims directed to the following patentably distinct species of the claimed invention:

- the applicant is requested to elect one species of component (B).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, Claim 1 is generic.

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Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

5. During a telephone conversation with Larry Rising on November 30, 2004 by Examiner Erma Cameron, a provisional election was made "with traverse to prosecute the invention of Group I and “fluorine-containing copolymer” as (B), Claims 1-2". Affirmation of this election must be made by applicant in replying to this Office action. Claims 3-15 are withdrawn

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from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

6. Claims 1 and 2 are objected to because of the following informalities:

(a) On **Claim 1** at line 2, recitation of “NPB(n-propyl bromide)” should be changed to “**NPB (n-propyl bromide)**” according to traditional wording used in the art. A space is needed in between NPB and (n-propyl bromide). Please refer to page 2 at line 2.

(b) On **Claim 2** at lines 6-7, the formula expression for perfluoroalkyl group-containing poly(meth)acrylate is very improper and should be rewritten to “ **C_nF_{2n+1}-X-O-CO-CR=CH₂** ”. Approximate corrections are needed.

Claim Rejections - 35 USC § 112

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7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(A) On **Claim 1 at lines 2-3 and Claim 2 at line 3**, the phrase "to apply fluorocarbons and other chemicals" on Claim 1 and the use of two components as "A" and "B" in the dependent Claim 2 renders the claim indefinite because it is unclear whether the limitation of fluorocarbons are part of the claimed invention. The formulation according to Claim 1 requires three components: (a) NPB, (b) fluorocarbon and (c) other chemical. Claim 2 contains only two components; it is therefore not consistent with the limitation of Claim 1.

(B) The writing of Claim 1 as a chemical formulation is improper and indefinite since **the disclosure on lines 2-4 is related to a process**. In view of the Applicants' working examples on page 10-12, the Applicants may consider a suggestion to rewrite Claim 1 into a composition claim as "Chemical formulations comprising (A) NPB (n-propyl bromide) and (B) a coating component. Said NPB is utilized as a non-aqueous carrier medium to apply component B to substrates, whereby the NPB is evaporated away leaving the component B on the substrate, and wherein said component B is selected from the group consisting of fluorocarbons and other chemicals".

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. *The limitation of parent Claim 1 in present invention relates to chemical formulations utilizing NPB (n-propyl bromide) as non-aqueous carrier mediums to apply fluorocarbons and other chemicals to substrates, whereby the NPB is evaporated away leaving the remaining chemicals on the substrate. See other limitations of dependent Claim 2.*

10. Claim 1 is rejected under 35 U.S.C. 102(a) and/or 102(e) as being anticipated by Jackson et al. (US 6,342,471 B1, which is equivalent to GB 2,359,086 A).

Regarding the limitation of parent **Claim 1**, Jackson et al. disclose, in each of US and GB patent, the preparation of a propellant-rich aerosol cleaner for use with electrical circuit

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boards and electrical connector components. One formulation may comprise: (A) n-propyl bromide (NPB) useful as solvent in 40 wt%, (B) HFC liquefied gas such as **tetrafluoroethane** (HFC-134a) useful as a propellant in about 50 wt%, and (C) n-propanol (column 2, line 43-51) in 1-5 wt%. (abstract; column 3, line 31-38; also see **advantage by using NPB** in column 3, line 56 – column 4, line 3).

11. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Flynn et al. (US 5,827,812).

Regarding the limitation of parent **Claim 1**, Flynn et al. disclose the preparation of an azeotrope-like solvent composition to be useful for coating deposition applications to dissolve coating materials such as perfluoropolyether lubricants and fluoropolymers and then thereby enable deposition onto substrate (column 2, line 36-46; column 3, line 44-49; column 7, lines 18-21 and 49-54). One formulation for such an azeotrope-like solvent composition may comprise: (A) 1-bromopropane (which is structurally exactly equivalent to the claimed n-propyl bromide (NPB)), (B) R₁OCH₃, and (C) some HCFC liquefied gas such as HCFC-225ca and HCFC-225cb to be useful as a propellant (abstract; column 6, line 16; column 2, line 3-29).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al. (US 6,342,471 B1, which is equivalent to GB 2,359,086 A) or Flynn et al. (US 5,827,812), each individually in view of Aharoni et al. (US 5,139,879).

The discussion of the disclosures of the prior art of Jackson for Claim 1 of this office action is incorporated here by reference. The discussion of the disclosures of the prior art of Flynn for Claim 1 of this office action is also incorporated here by reference. Regarding **Claim 2**, each of Jackson and Flynn references is **silent about further including a specific fluorinated copolymer having the formula of “C_nF_{2n+1}-X-O-CO-CR=CH₂”**. Aharoni et al. teach that in the course of making an anti-reflection coating, a fluoropolymer blends comprising (A) a terpolymer containing the claimed C_nF_{2n+1}-X-O-CO-CR=CH₂ unit and (B) an amorphous fluoropolymer is used (abstract, line 1-7; column 1, line 63 – column 2, line 35). By doing so, an

advantage is to obtain an optical coating with reduced reflection on various types of substrate surface such as optical surfaces, windows, transparent films, display surfaces, glossy photographs and the like (column 1, line 12-17).

14. In light of the fact that Aharoni, Jackson and Flynn are preparing the same or similar type of film deposition or coating, one having ordinary skill in the art would therefore find it obvious to modify Jackson or Flynn's composition by adding fluoropolymer or its blend having the claimed $C_nF_{2n+1}-X-O-CO-CR=CH_2$ unit as taught by Aharoni. By doing so, one would expect to obtain an optical coating with reduced reflection on various types of substrate surface such as optical surfaces, windows, transparent films, display surfaces, glossy photographs and the like. Thereby a better and more diversified product can be obtained.

Conclusion

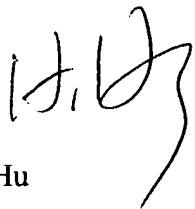
15. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The following references relate to chemical formulations utilizing NPB (n-propyl bromide) as non-aqueous carrier mediums to apply fluorocarbons and other chemicals to substrates:

US Patent No. 6,699,829 B2 to Doyel et al. discloses the preparation of chemical solvating, degreasing, stripping and cleaning agents. The agent is a mixture of dichloroethylene, alkoxy-substituted perfluoro compounds (abstract, line 1-6). It may further

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include NPB solvent (column 2, lines 42 and 48; column 4, line 1). However, Doyel fails to teach or fairly suggest using such a solvent composition to be useful for coating deposition applications to dissolve coating materials and then thereby enable deposition onto substrate.

16. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Henry S. Hu whose telephone number is (571) 272-1103. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306 for all regular communications. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Patent Examiner, Art Unit 1713, USPTO

March 15, 2005



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